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(71) Applicant
Sirius Srl (France),
18 Avenue des Champs-Elysees, 75008 Paris, Seine, France

(72) Inventors
Philippe L'Hermite,
Pierre Percevault

(74) Agent and/or Address for Service
Lloyd Wise Tregear & Co,
Norman House, 105-109 Strand, London WC2R 0AE

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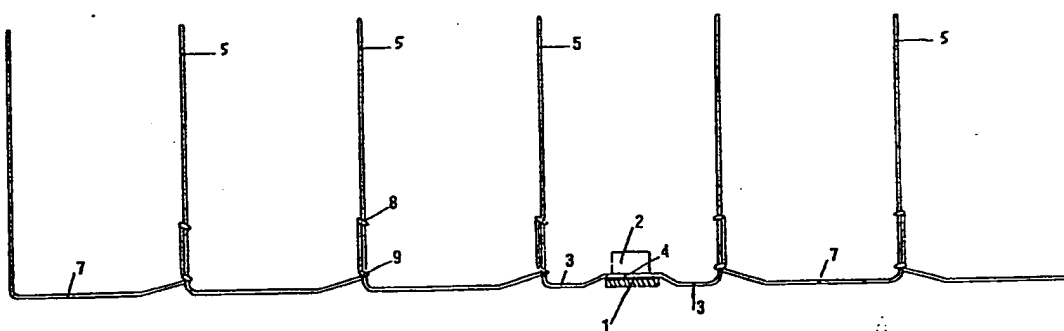
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(58) Field of search
A1E
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(54) Preventing birds perching on buildings

(57) A device for preventing winged creatures, particularly pigeons, from perching on building elements, comprising evenly spaced apart barbs 3, disposed perpendicularly to the surface to be protected, having a flat semi-rigid support 1 one face of which is smooth and the opposite face of which is provided with evenly spaced apart locating pegs 2 cooperating with movable snap fit barbs each comprising two legs forming spikes 5 disposed perpendicularly to the plane of a support plate and a bent leg forming a fixing eyelet 4 adapted to the shape of said locating pegs. Further barbs can be attached by sliding loops 8 thereon over the spikes 5.



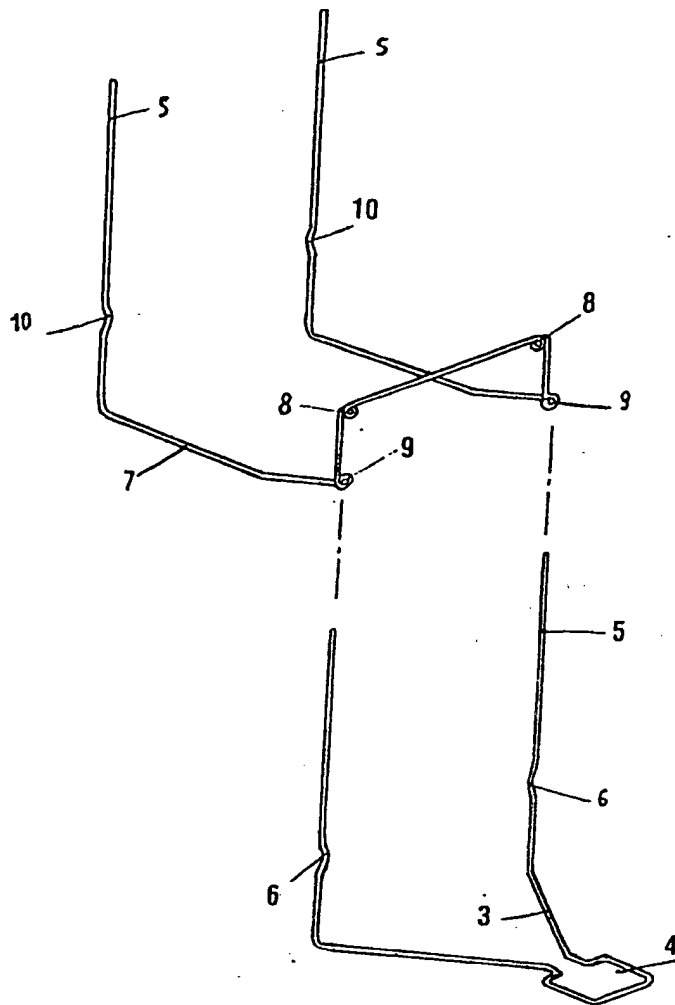
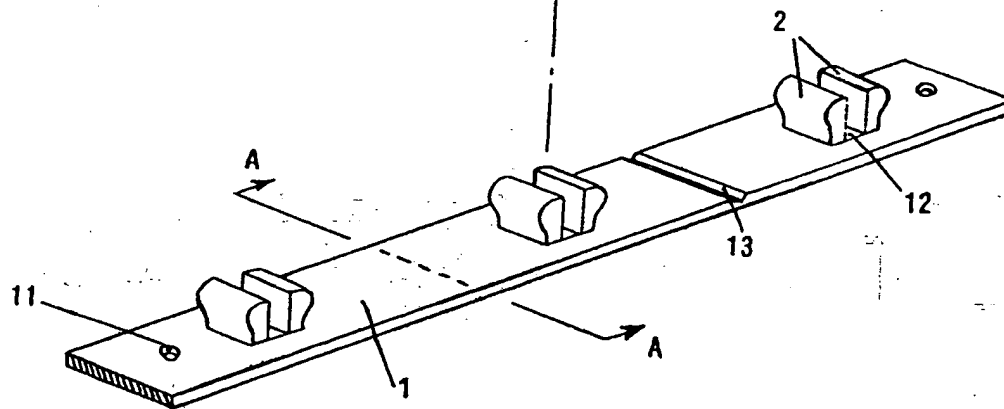
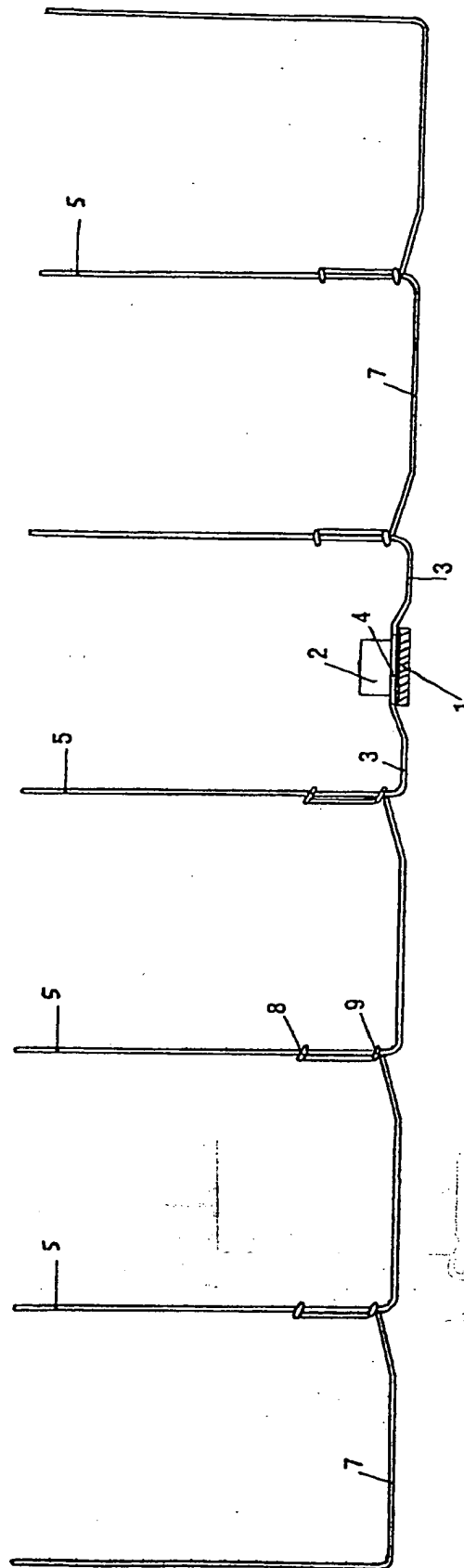
**Fig. 1**

Fig. 2



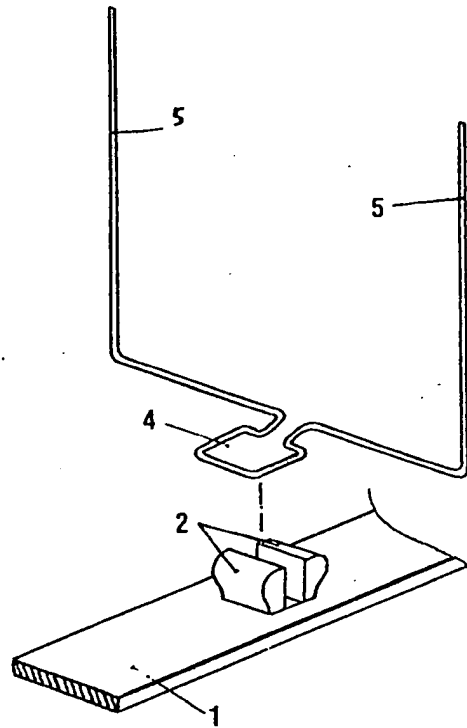
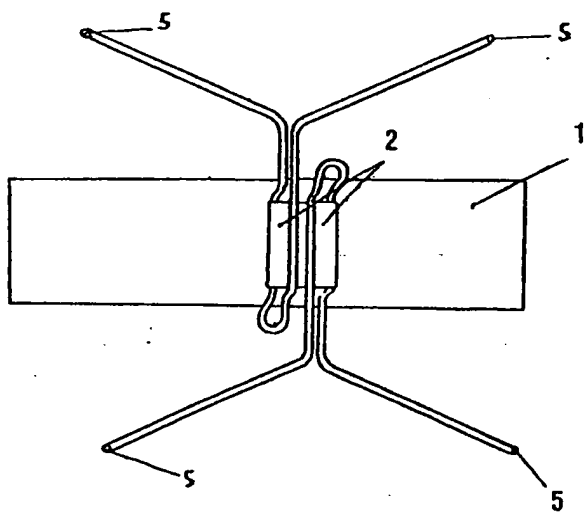
**Fig. 3****Fig. 4**

Fig. 5

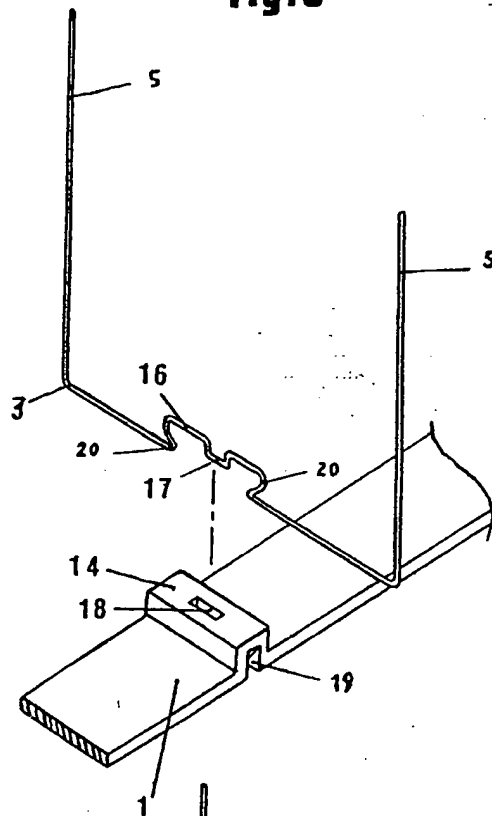
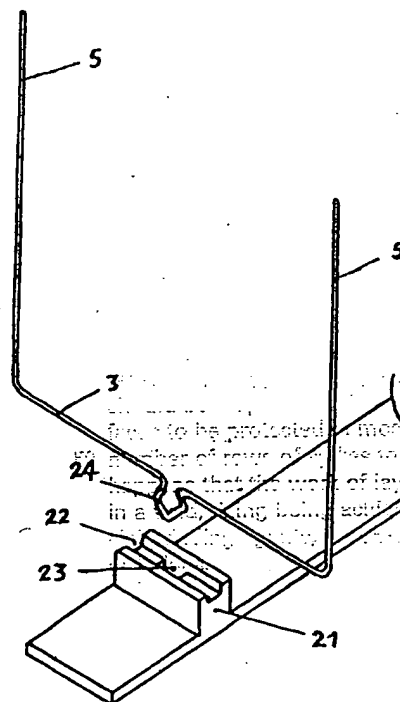


Fig. 6



to be protected in most cases require a large number of rows of lines to be placed, it often happens that the work of laying them takes place in a relatively long time, which is not desirable.

The shape of the said it is possible to form a line defined by a number of points, which is not possible in the case of a straight line.

SPECIFICATION

A device for preventing winged creatures from perching on building elements

5 The present invention relates to a device for preventing winged creatures, particularly pigeons, from perching on any surface and elements allowing such perching, particularly ledges, frontages, 10 roofs of any building or fixed or mobile works.

The harmful effects caused by pigeons constitute a very serious problem in towns throughout the world.

15 These harmful effects affect not only the well being and the health of city dwellers (infections and parasites, allergies, ...) but also cause considerable damage to frontages, roofs, gutters, vehicles, etc..

20 The present means used for fighting pigeons are well known: bird lime, nets, or devices fixed to the parts to be protected, consisting of positioning elements provided with evenly spaced "spikes".

It has proved that only nets, in very special cases, but more particularly the spike devices to be 25 fixed on ledges or frontages are efficient in a durable way. The device described in Australian patent No. 43.178/79 is more especially known. However these devices have numerous serious disadvantages.

30 In fact, although sometimes efficient these devices come up against two major problems.

The first obstacle concerns the aesthetic appearance. Most of these devices are in fact extremely visible, even in the new condition and because of 35 their design and their size, undergo accelerated ageing which often leads the owners of buildings (and more particularly historical monuments) to give up the use of these devices because of the damage to the appearance of the buildings.

40 Moreover, because of their characteristics - rigidity, linearity, - they cannot in any case be used in numerous cases.

The second serious disadvantage resides in the problems of positioning and holding them in position. It should in fact be noted that, so as to prevent pigeons from perching on the surfaces to be protected, an optimum spacing of six centimeters should be respected between spikes. Now, the surfaces to be protected in most cases require a large 50 number of rows of spikes to be placed. It often happens that the work of laying them takes place in a void, fixing being achieved by means of special bonding agents, for example on window sills or ledges.

55 The use of such devices involves then, for a small area, the fastidious sticking or glueing of a large number of elements which must in addition be held in place until the glue has set, resulting in considerable work. Furthermore, the non flat bonding surfaces do now allow satisfactory hold.

60 It would then be logical to ally to the total discretion of such a device, a design allowing extremely rapid laying with maximum adherence, thus implying a reduction of risks of accidents for the staff 65 working under conditions which are often danger-

ous as well as a reduction of the positioning costs.

This is what the present invention allows to be obtained, thus overcoming the serious disadvantages recalled above.

70 The device of the invention comprises a flat, long and narrow semirigid support one face of which is smooth and the opposite face of which is provided with evenly spaced apart locating pegs intended to cooperate with movable snap-fit barbs 75 each comprising two legs forming spikes disposed perpendicularly to the plane of said support and a bent leg forming a fixing eyelet adapted to the shape of the locating pegs.

80 In a first embodiment of a locating peg, this latter has two parallel semirigid flanges, disposed perpendicularly to the support and separated by a groove, the part of the flanges opposite said support comprising two rounded shoulders for holding a barb fixing eyelet in position between said shoulders and said support. 85

In a second embodiment of a locating peg, this latter is formed by a projecting strip having a notch at each of its ends and advantageously, a median groove, the barb fixing eyelet having bent 90 parts intended for cooperation respectively with said notches and said groove.

According to other features:

- a barb is formed from a metal wire, in a single piece, bent into a U shape and comprises a substantially rectangular fixing eyelet intended for insertion parallel to said support under the shoulders of a locating peg; 95

- the two legs of the U shaped barb may comprise a slight indentation for holding additional U shaped barbs in position themselves provided with indentations, whose eyelets are in the form of loops each cooperating with the indentations; 100

- a U shaped barb is provided with a bent eyelet in the form of a diamond for snap fitting into a slit formed in the center of a groove perpendicularly to the strip, in which said barb is inserted. 105

The locating pegs secured to the support allow an underface of said support to be obtained which is perfectly smooth and flat, an essential condition 110 for providing good holding in time of the device when fixed by bonding. To these locating pegs are fixed the barbs for preventing winged creatures from having access to the flat surfaces.

The shape of the locating pegs is provided so 115 that it is possible to snap fit the barbs into a position defined by the user with respect to the support (parallel, perpendicular or at any other angle).

These barbs, formed preferably from a metal wire with high mechanical characteristics, fine and 120 so invisible from a few meters, comprise two vertical spikes connected together by a horizontal part, which has centrally a bent eyelet adapted to the shape of the locating spike. The metal part thus formed has the qualities of a spring.

125 As mentioned above, at a certain height from the base of these vertical barbs, a slight localized indentation of the spring allows a second barb spring with eyelets to be fixed at these points, said spring being snap fitted to the first spring at these 130 indentations. This second barb will therefore keep

its position once positioned on the first barb and it can only be withdrawn by human action.

The design of the spring bars of the invention allows a single support to be used for a great length
5 where any other arrangement existing at the present time requires the bonding of a large number of supports.

Furthermore, the design of the locating pegs allows rapid manual snap fitting of the barbs by simply pressing them, said pressure further improving
10 the contact between the support and the surface on which it is disposed, so that bonding, in the case of fresh bonding.

Furthermore, the possibility of only positioning
15 the support without its barbs during bonding does away with the risks of imbalances of the support due to the weight of these barbs, such imbalances requiring a prolonged pressure so as to prevent the support from becoming unstuck.

The supports are preferably made from an injection molded semi-rigid plastic material and comprise spaced apart locating pegs preferably having a generally square shape, whose top is rounded for easy fitting of the barb.

Precut grooves may be formed in the surface of the support during molding, between the locating pegs, so that the supports may be cut to the required length without use of a tool by simply twisting on each side of the groove.

Holes may be preformed at regular intervals on the support, so as to allow fixing by screws, nails, or any other means; in addition, these holes facilitate the uniform distribution of the bonding layer, allowing a possible local excess thereof to be removed from the central part during the application of pressure.

The locating pegs are designed so that removal of the spring barbs is very difficult, since once in position they are housed in a cavity provided for this purpose.

The locating pegs comprise centrally a recessed portion for possibly housing a collar for fixing to the support, in the cases where such collar fixing is preferred to bonding.

Once this support strip is in position, the user has the possibility of widening the device at will when following the reliefs to be protected, by simply adding snap fit barbs which are also provided so as to be able to receive new barb springs.

It should be noted that the design of these
50 springs allows a minimum of four to five rows of barbs to be positioned on each side of a single support strip, with excellent stability, which divides by ten or more the time required for positioning.

Of course, the support strip may be made from any material other than a plastic material, and the locating pegs for fixing the bars may be square, triangular or have any other appropriate shape adapted for correctly holding the barbs in position,
55 the eyelet for fixing the spring barb being adapted to the shape of the locating peg.

In a variant, the support strips are without projecting pegs, positioning of the springs being provided by means of slits or grooves specially
60 formed on the top, the bottom or the sides of the

support strips and the spring barbs are formed by one or two spikes having their shape adapted to the above fixing means, existing on the support strips.

70 The barbs, normally made for example from steel, may also be formed from agglomerated fibers such as glass fibers and carbon fibers, plastic material fibers or fibers made from any other material.

For positioning the device, the support strips are fixed to particular constructive works (gutters, different galvanized iron parts, street lamps and lanterns etc) by bonding, or by using metal parts known per se, adapted to the shape of the support.

The accompanying drawings show:

80 *Figure 1* a perspective view of the different component parts of a first embodiment of the invention and the method of assembling same.

Figure 2 shows a view of the same component elements, assembled together along AA of *Figure 1*, the snap fit spring elements being disposed alternately on each side of the support strips.

Figure 3 shows a perspective view of the first variant of the metal barb.

90 *Figure 4* shows a top view of a second variant of the metal bar.

Figure 5 shows a perspective view of the different component parts of the device according to a third variant.

95 *Figure 6* shows a perspective view of the different component parts of the device in a fourth variant.

In the drawings, the same references designate the same parts.

100 In the embodiment of the invention such as shown in *Figure 1*, a support strip 1, made preferably from a semi rigid plastic material, is provided with locating pegs 2 spaced apart at even intervals.

105 These support strips cooperate with barbed springs 3 having an eyelet 4 for snap fitting to the locating pegs.

These barb springs terminate at each end in vertical spikes 5 of a height studied for dissuading winged creatures from settling.

110 Positioning of the barb spring 3 on the support strip 1 may be arranged either with the two spikes situated on the same side of the strip, as shown in *Figure 1*, or with one spike on each side of the strip, this being determined by the user depending on the width of the surfaces to be treated or on other requirements.

115 So as to be able to extend the field of application of the device at will, and so as to be able also to follow the reliefs of the surfaces to be protected, spring 3 has an indentation 6 at a certain height from the base of the vertical spikes 5. This indentation allows a second spring 7 to be held in place, the spacing between its eyelets 8 in the form of loops being identical to the spacing between the indentation 6.

120 So as to obtain excellent stability of the spring 7, this latter not being fixed to the support strip, eyelets 9 also in the form of loops provide two point (8 - 9) fixing to each vertical spike 5.

125 The device may be widened at will, such as

shown in Figure 2, by simply adding other springs 7, which are also provided with indentations 10 on the vertical spikes.

The support strips 1 are normally provided for bonding to the surface to be protected. However, for allowing fixing to any support, holes 11, are provided during molding, thus allowing fixing by nails, screws or similar.

Fixing by means of a collar or similar is also possible, the collar passing through the groove or hollow space 12 existing in the middle of the locating pegs 2 and through the opening in eyelet 4.

Transverse precut grooves 13 are formed in the support strips 1, so as to adapt the length of the strip surfaces to be treated.

In the embodiment shown in Figure 4, two barbs may be snap fitted to the sape locating peg, the eyelet of each barb forming a spring enclosing the base of a flange 2 of the locating peg.

In the embodiment shown in Figure 5, which shows a second embodiment of the invention, the support strip 1 comprises evenly spaced thickened portions playing the role of the locating pegs in the preceding embodiments. Such a thickened portion allows a spring 3 to be received by snap fitting, having two vertical spikes 5 and a means 16 for snap fitting to the support strip. This snap fit means comprises a stabilizing end 17 intended to be housed in a space 18 specially provided for this purpose in the thickened portion 14, this latter further comprising at both its ends notches 19 for cooperating with bends 20 in spring 15.

In the embodiment shown in Figure 6, which shows a third embodiment of the invention, the thickened portion 21 is provided with a stabilizing transverse groove 22 in which the barb 3 is housed. An opening 23 formed in the median part of the groove allows snap fitting of the barb 3, by means of an eyelet 24.

It should be noted that in all the above-disclosed embodiments the two spikes (5) of a barb have the same height but for instance two heights of spikes may be realised so that barbs may be disposed along the flat support with said two heights alternate.

The invention is particularly intended for the protection of all surfaces on which birds, and more particularly pigeons, come and perch.

CLAIMS

1. A device for preventing winged creatures from perching on building elements, of the type comprising evenly spaced apart barbs, disposed perpendicularly to the surface to be protected, characterized by a flat semi-rigid support one face of which is smooth and the opposite face of which is provided with evenly spaced apart locating pegs cooperating with movable snap fit barbs each comprising two legs forming spikes disposed perpendicularly to the plane of a support plate and a bent leg forming a fixing eyelet adapted to the shape of said locating pegs.

2. The device according to claim 1, in which a locating peg has two parallel semi-rigid flanges

disposed perpendicularly to the support and separated by a groove, the part of the flanges opposite the support comprising two rounded shoulders for retaining a barb fixing eyelet in position between said shoulders and the support.

3. The device according to claim 1, in which a locating peg is formed by a projecting strip having a notch at each of its ends and a median groove, the barb fixing eyelet having bent parts intended to cooperate respectively with the notches and said groove.

4. The device according to claim 1, in which a locating peg is formed by a projecting strip having a transverse groove and a median opening, the eyelet for fixing the barb being intended to snap fit and cooperate with said groove and the median opening.

5. The device according to any one of the preceding claims in which a barb is formed from a wire bent into a U shape, forming a single piece, and that it comprises a substantially rectangular fixing eyelet intended to be inserted parallel to the support under the shoulders of the locating peg.

6. The device according to any one of the preceding claims in which the two legs of a U shaped barb comprise an indentation for holding a second U shaped barb in position whose eyelets are in the form of loops cooperating with said indentation.

7. The device according to any one of the preceding claims in which two barbs are snap fitted on the same locating peg, the eyelet of each barb forming a spring enclosing the base of a flange of the locating peg.

8. The device according to any one of the preceding claims in which the support comprises pre-pierced holes for fixing by means of nails or screws as well as transverse precut grooves for adapting the length of the support to the surfaces to be protected.

9. The device according to any one of the preceding claims in which the barbs form a spring and are made from metal, agglomerated fibers or a plastic material.

10. The device according to any one of the preceding claims in which barbs having two heights of spikes are disposed alternate along the flat support.

11. The device according to Claim 1 and substantially as hereinbefore described with reference to the accompanying drawings.